

WHAT IS CLAIMED IS:

1. An OLED device comprising:
 - (a) an array of light emitting pixels, each pixel including subpixels having organic layers including at least one emissive layer that produces light and spaced electrodes, and wherein there are at least three gamut subpixels that produce colors which define a color gamut and at least one subpixel that produces light within the color gamut produced by the gamut subpixels; and
 - (b) wherein at least one of the gamut subpixels includes a reflector and a semitransparent reflector which function to form a microcavity.
2. The OLED device of claim 1 wherein the reflector in the also functions as an electrode for at least one of the subpixels.
3. The device of claim 1 wherein the semi-transparent reflector also functions as an electrode for one of more the subpixels.
4. The OLED device of claim 1 wherein the colors produced by the gamut subpixels are red, green and blue, and the color produced by the within gamut subpixel is white.
5. The OLED device of claim 1, wherein the organic layers produce broadband emission and are common to all the subpixels of all the pixels.
6. The OLED device of claim 5, wherein at least one of the gamut subpixels further comprises a color filter element.
7. The OLED device of claim 1, wherein the device is a passive matrix device.
8. The OLED device of claim 1, wherein the device is an active matrix device.
9. The OLED device of claim 1, wherein the gamut subpixels having a microcavity structure further comprise a transparent cavity-spacer layer, wherein the thickness of the transparent cavity space layer, refractive index of the transparent cavity space layer, or both are separately adjusted for each different color gamut subpixel in conjunction with the thickness and refractive index of the organic layers for each gamut subpixel to tune the microcavity to the desired colors.

10. The OLED device of claim 9, wherein the transparent cavity spacer layer of one of the gamut subpixels is formed of the same material and thickness as the transparent electrode of at least one of the within gamut subpixels.

11. The OLED device of claim 1, wherein the all but one of the gamut subpixels having a microcavity structure further comprise a transparent cavity-spacer layer, wherein the thickness of the transparent cavity space layer, refractive index of the transparent cavity space layer, or both are separately adjusted for each different color gamut subpixel in conjunction with the thickness and refractive index of the organic layers for each gamut subpixel to tune the microcavity to the desired color.

12. The OLED device of claim 11, wherein the transparent cavity spacer layer of one of the gamut subpixels is formed of the same material and thickness as the transparent electrode of at least one of the within gamut subpixels.

13. The OLED device of claim 1, wherein one or more of the layers of the organic layer is separately patterned for one or more of the subpixels.

14. The OLED device of claim 13, wherein one or more of the layers of the organic layers is separately patterned for each of the gamut subpixels.

15. The OLED device of claim 13, wherein organic layers generates a broadband emission and all the layers of the organic layers are the same for one or more of the gamut subpixels and one or more of the within-gamut subpixels.

16. The OLED device of claim 1, wherein the device is bottom emitting.

17. The OLED device of claim 1, wherein the device is top emitting.